

SIGNAGE SPECIFICATIONS

PART 1 – GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ALUMINUM ASSOCIATION (AA)

AA DAF45 (2003; Reaffirmed 2009) Designation System for Aluminum Finishes

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

AMERICAN WELDING SOCIETY (AWS)

AWS D1.2/D1.2M (2008) Structural Welding Code - Aluminum

ASTM INTERNATIONAL (ASTM)

ASTM A1011/A1011M (2012b) Standard Specification for Steel, Sheet, and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability and Ultra-High Strength

ASTM A123/A123M (2012) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

ASTM B209 (2010) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate

ASTM B221 (2013) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes

ASTM D3841 (1997; E 2008; R 2008) Standard Specification for Glass Fiber-Reinforced Polyester Plastic Panels

NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)

NAAMM AMP 500 (2006) Metal Finishes Manual

NFPA 70 (2014) National Electrical Code

SAE AMS3611 (2011; Rev E) Plastic Sheet, Polycarbonate General Purpose

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED NC (2009) Leadership in Energy and Environmental Design(tm) New Construction Rating System

1.2 DESCRIPTION OF WORK

A Work included: Provide labor, materials, equipment and services necessary to furnish and install signs of size, material, images, arrangements, components and construction, and related work.

- 1 Do not scale drawings for dimensions. Contractor to verify and be responsible for all dimensions and conditions shown by these drawings. Resident Engineer to be notified of any discrepancy in drawing, in field directions or conditions, and/or of any changes required for all such construction details.

SECTION 10 14 00

- B Permits and Fees: Obtain and pay for all permits and fees. The Sign Fabricator shall be responsible for submitting necessary information for any City approvals, permits and variances and for scheduling and attending meetings with the City for necessary approvals.
- C The Sign Contractor, by commencing work of this section, assumes overall responsibility, as part of his warranty of work, to assure that assemblies, components and parts shown or required within the work of the section, comply with the Contract Documents. The Contractor shall further warrant: That all components, specified or required to satisfactorily complete the installation are compatible with each other and with conditions of installations.

1.3 SUBMITTALS

- A General: Prepare and submit color/finish samples, engineering and calculations, shop drawings to dimensioned layouts, camera-ready artwork and product data. Revise and re-submit to establish conformance with the specified requirements.
- B Contractor's Review: Submittals shall bear the approval stamp and signature of the Contractor. Submittals made without the Contractor's approval stamp will be returned without action. Approval of Shop Drawings, Product Data, and Samples by the Contractor represents his acknowledgement that the submittals are in compliance with applicable laws, statutes, building codes and rules and regulations of public authorities or utilities having jurisdiction. It is understood that information contained in Contractor's submittals does not represent any deviation from the Contract Documents or a change in the Contract amount or Contract time. Contractor's submittals which indicate or imply a substitution of a specified product will not be considered unless the substituted product has been previously approved.
- C Submittal Procedures: Submittal of shop drawings, product data and samples shall be made utilizing a transmittal form. Specific submittal procedures shall be as established at the Pre-Construction Conference.
- D Designer's Review: The term "Designer" for purposes of reviewing Shop Drawings, Product Data, Samples and Certifications means the Designer or his Consultant whose action stamp and notations appear on the submittal. The Designer will review Shop Drawings, Product Data and Sample submittals and will transmit them to the Contractor with an action stamp affixed thereto. This stamp will indicate the following actions:
 - 1 "REVIEWED" means that the Contractor may proceed with manufacture, fabrication or construction indicated in the submittal.
 - 2 "REVIEWED AS NOTED" means that the Contractor may proceed with manufacture, fabrication or construction providing the Designer's notations are incorporated into the work. Re-submittal is not required unless the Contractor is unable to comply with the notations.
 - 3 "REVISE AND RESUBMIT" means that the submittal does not comply with the design concept expressed in the Contract Documents Contractor shall make revisions and re-submit.
- E Notations by the Designer on submittals which the Contractor believes will increase the Contract amount or Contract time shall be brought to the Designer's attention in the form of a written claim, following the procedure described in the General Conditions.
- F The Designer's review of Shop Drawings, Product Data and Samples is for the limited purposes defined in the General Conditions and does not imply approval of deviations from or substitution to the Contract Documents or changes in the Contract amount or Contract time.

SECTION 10 14 00

- G SUBMITTAL SCHEDULE -The following submittals shall be provided for the various sign types to be provided for this project:

Sign Type	Color and Finish Sample	Eng	Shop Drawing	Prototype	Artwork Provided	Product Data
A	x		x		**	x
B	x		x		**	x
C1, C2, C3, C4	x		x	C2, C3	**	x
D1, D2, D3, D4, D5, D6	x		x	D2, D3	**	x
E	x		x			x
F	x		x			x
G	x		x		**	x
H	x		x		**	x
K	x		x			x
FUTS logo					*	
City of Flagstaff Seal					**	

**Provided by JRC Design **Provided by Client/Others*

H. DESCRIPTION OF SUBMITTALS

1 Color/Finish Samples

- Supply actual materials in the colors which will be used for the Work for review. Minimum size shall be 6" x 6", unless larger or smaller sizes are applicable to the material that the sample represents.
- Submit three (3) of each sample. One sample will be returned to the Contractor. Contractor shall keep samples on file at the site to be used as control references for judging acceptability of the Work.

2 Engineering and Calculations

NOT USED.

3 Shop Drawings

Prepare accurately and of sufficient scale to show all aspects of the item or assembly including its method of attachment and relationship to adjoining Work. Shop Drawings are to be specifically prepared for the Work and shall not be reproductions of the Contract Documents. Submittals prepared from a reproduction of the Contract Documents will be returned without action. Shop Drawings may show minor variations from Contract

SECTION 10 14 00

Documents due to standard shop practice, field conditions or for other reasons which do not affect the Contract amount. If artwork is provided on disk, must be in Macintosh format in either Adobe Illustrator or PDF format.

- a. Indicate materials, dimensions, thicknesses, connections, weights, clearances, and all other pertinent data and information.
 - b. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
 - c. Provide message list, timesteps, graphic elements, including tactile characters and Braille, and layout for each sign.
 - d. For sign types requiring interior reinforcement, show internal structure, mounting poles and base details.
 - e. For sign types requiring electrical connections, indicate power, signal and control wiring details.
 - f. Do not make changes in visual elements without Designer's prior review and written approval.
 - g. Should the Fabricator find ambiguities, inconsistencies or errors in the Drawings or Specifications, or should they be in doubt as to their meaning, the Designer shall be notified at once, in writing, so the designer may provide clarification.
4. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches .
 5. Number of Copies: Submit copies of each submittal, as follows:
 - a. Initial Submittal: Submit five prints
 - b. Final Submittal: Submit five prints where prints are required for operation and maintenance manuals. Designer and Owner's Representative will retain two prints; remainder will be returned.
 6. Full-Size Layouts
 - a. Placement on sign face, letter spacing, size, spelling, punctuation, typestyle, legibility and other information which describes the sign layout. Layouts shall include outline of sign face for reference and shall be reproducible.
 7. Camera-Ready Artwork/Artwork on Disk
 - a. Full-size artwork or high quality photocopies or diazo prints of artwork. If copies are submitted, they shall be suitable for judging sharpness of art and alignment. If artwork is provided on disk, must be in Macintosh format in either Adobe Illustrator or PDF files.
 8. Product Data
 - a. Submit original manufacturer's Product Data including brochures or standard catalog items. Clearly indicate item or model, space requirements, weights, sizes, dimensions, performance characteristics, capacities, wiring diagrams, controls, accessories and other pertinent data.

1.4 QUALITY ASSURANCE

REFER TO 102.1 OF THE MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION—2011 EDITION.

- A. Manufacturer qualifications: Fabricate and install work of this specification using a manufacturer *having a minimum of five (5) years experience in this type of work on projects of this size*. Use adequate numbers of skilled workmen who are thoroughly trained and experienced

SECTION 10 14 00

- in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this specification.
- B. Subcontract List: Prepare a **written summary** identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.
 - C. Source Limitations for Signs: Obtain each sign type indicated from one source from a single manufacturer.
 - D. Installer Qualifications: An employer of workers trained and approved by manufacturer. Minimum five years documented experience in work of this Section.
 - E. NOT USED.
 - F. Prototype: Upon award of contract, fabricator to provide prototypes for evaluation of surface preparation techniques and application workmanship for sign types.
 - 1. Furnish signs designated by Designer in sign section 103.G Submittal Schedule.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Designer.
 - 3. Refinish mock-up area as required to produce acceptable work.
 - G. NOT USED.
 - H. NOT USED.

1.5 COORDINATION

- A. Sign contractor to coordinate with General Contractor for on-site inspections and sign installation.
 - 1. Coordinate with other trades to assure proper and adequate provision in work of those trades for interface with the work of this specification. Coordinate schedules for installation of the work of this specification with schedules for other installations, to provide orderly progress of the total construction sequence.
 - 2. Coordinate placement of anchorage devices with templates for installing signs.
- B. Delivery, Storage and Handling
 - 1. Do not deliver signage to site until areas in which they are to be installed are ready to receive them.
 - 2. Deliver materials to site in as large fabrications as possible, protected from damage, in a manner to protect finishes. Store in appropriate location away from heavy traffic until time of installation. Handle carefully to avoid damage. Damaged materials will be rejected.

1.6 WARRANTY

REFER TO 102.1 & 108.8 OF THE MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION—2011 EDITION.

SECTION 10 14 00

- A. Guarantee materials and *warranty workmanship for a period of one (1) year* after the final acceptance of the Work and if during this period any defects or faulty materials are found, immediately upon notification of the Owner's representative, proceed at own expense to remedy the condition together with any damage to the surrounding finished or furnishing occurring as a result of the defect.
- B. Preparation, primer, and ***finish coats shall be guaranteed for two (2) years*** against pitting, peeling, or fading.
- C. Guarantee high pressure laminates for ***not less than ten (10) years from time of purchase*** that the product will not delaminate, peel, blister, crack or fade under normal wear and use.

1.7 EXTRA STOCK

See FUTS Bid Schedule.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 MAINTENANCE

- A. Furnish ***two (2) complete sets of manuals containing the manufacturer's instructions*** for maintenance and operation of each item of furnished. Manuals shall contain, but not be limited to the following contents:
 - 1 List of product manufacturers names, addresses and telephone numbers of local representatives, suppliers and installers.
 - 2 Maintenance instructions.
 - 3 Parts list of major equipment, including recommended items to be stocked as spares.
 - 4 Copy of guarantees and warranties for items referenced in the manuals.
- B. Arrange the contents of the manuals in the order in which they occur in the specifications, indexed and ***bound in heavy duty, three-ring binders***. Provide a permanent label on each manual which identifies the name of the project and the general subject matter contained therein. Each manual shall also contain the Contractor's name, address and telephone number on the Table of Contents page..
- C. Assemble the manuals; verify that each manual is complete and accurate and deliver them to the Owner with a copy of the transmittal to the Designer prior to application for final payment.
- D. Instructions shall ***address periodic cleaning, service access, painting, and replacement*** procedures prior to Substantial Completion.

1.10 SUSTAINABILITY REQUIREMENTS

- A. LEED REQUIREMENTS
NOT USED
- B. EPA Comprehensive Procurement Guidelines
NOT USED

1.11 PROJECT INFORMATION

- A. Owner's Name and Address:

SECTION 10 14 00

City of Flagstaff

B. Project Name and Address:

Flagstaff Urban Trail System (FUTS)

Flagstaff, Arizona

C. Designer: JRC Design

4634 North 44th Street

Phoenix, Arizona 85018

(602) 224-5100 (p)

(602) 224-5102 (f)

A DYE DESIGN INC.

P O Box 4236

201 W. Colorado Ave. #202

Nugget Building

Telluride, CO 81435

970.728.5444 (p)

970.728.5666 (f)

PART 2 – PRODUCTS

2.1 MATERIALS AND COMPONENTS

- A. General: Materials shall be new stock, free from defects, imperfections strength, durability, and appearance. Provide materials as shown and detailed on drawings and as specified herein.
- B. Weatherproofing: For exterior signs, provide additional protective coating to assure color integrity and abrasion resistance. Exterior structures which include hinged openings are to be sufficiently weatherproofed to prevent moisture, excessive dust, insects, and debris, from accumulating within interior cabinet areas which are exposed to exterior access.
- C. Structural Requirements: Letters and signs shall be structurally designed by sign manufacturer to resist a minimum 30 psf wind loads or wind loads established by Codes in effect at the location of the project, and thermal movements without distortions or excessive deflections.

2.2 METALS (GENERAL)

- A. For fabrication of exposed metal work, use only materials which are smooth and free of surface blemishes including pitting, roughness, seam marks, roller marks, and trade names. Do not use materials which have stains and discolorations.

SECTION 10 14 00

- B. For exposed items of work which include plain flat surfaces in width of more than 50 times the metal thickness, provide sheet stock from mill which has been stretcher leveled to highest standard of flatness commercially available.
- C. Dissimilar Materials: Where dissimilar metals are in contact, or where aluminum is in contact with concrete, mortar, or absorptive materials subject to wetting, the surfaces shall be protected with a coat of asphalt varnish or a coat of zinc molybdate primer to prevent galvanic or corrosive action.

2.3 ALUMINUM

- A. Aluminum Sheet and Plate: ASTM B 209 alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 5005-H32.
- B. Aluminum Extrusions: ASTM B 221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 6063-T5.

2.4 STEEL

- A. Galvanized Steel Sheet: ASTM A 653/A 653M, G90 (Z275) coating, either commercial or forming steel.
- B. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304, stretcher-leveled standard of flatness.
- C. Steel Members Fabricated from Plate or Bar Stock: ASTM A 529/A 529M or ASTM A 572/A 572M, 42,000-psi (290-MPa) minimum yield strength.
- D. For steel exposed to view on completion, provide materials having flat, smooth surfaces without blemishes. Do not use materials whose surfaces exhibit pitting, seam marks, roller marks, rolled trade names, or roughness.

2.5 PLASTICS

NOT USED.

2.6 VINYL DIE-CUT CHARACTERS

NOT USED.

2.7 PIN MOUNTS

- A. Materials: Stainless steel threaded studs 3/16" round minimum x 2" long minimum, unless heavier gauge pin mounts are required by size and weight of material to which it is applied.
- B. Installation: Weld or attach studs to sign plaques with no distortions or discoloration to sign face. Minimum of four studs per plaque. Use epoxy adhesive where required in wall mounts. Receiving hole shall be 3/8" round minimum.

2.8 PAINTS

- A. Non-fade, resistant to discoloration and delaminate as a result of ultraviolet light or heat. Exact identification of paints to be noted on shop drawings or paint sample submittal. Inks, paints and lacquers shall be evenly applied and without pinholes, scratches, orange peeling, application marks, etc. Provide standard matte finish for applicable sign surfaces not exceeding 25 degrees of gloss. Painted metal with glossy finish will not be acceptable.
 - 1. Aluminum substrates: Two component polyurethane acrylic enamel (Polane or equal).
 - 2. Concrete substrates: Epoxy vinyl concrete paint to match specified colors.

SECTION 10 14 00

3. Prime coats or other surface pre-treatments, where recommended by manufacturer of paint, shall be included.

2.9 DIMENSIONAL CHARACTERS

- A. Cutout/Routed/Waterjet-cut Characters: Provide characters with square-cut, smooth, eased edges. Rounded corners are to be squared to match graphic samples shown in design drawings. Comply with the following requirements:
 1. Steel:
 - a. Minimum of 0.125 inch (3.18 mm) thick unless otherwise indicated on drawings.
 - b. Finish: Allowed to rust.
 - c. Color: Unpainted.
 2. Mounting: Mounting techniques varies based on the signage. Reference the signage drawings to mounting details. The mounting techniques incorporated are flush, with concealed noncorroding studs for substrates encountered.

2.10 POWDER COATING

NOT USED.

2.11 HIGH PRESSURE LAMINATES (HPL)

- A. Graphics must be manufactured as Custom High Pressure Laminate (CHPL). CHPL graphic sign material is composed of several layers of phenolic resin impregnated kraft filler paper, a digitally imaged graphic, a layer of melamine resin, surfaced by a layer of translucent exterior UV / graffiti overlay protection. The entire panel, including exterior overlay, must be bonded under heat and extreme pressure to form a composite panel. The finish must be smoothly textured with reflectivity of 30 + or - 5 gloss units. The CHPL graphics must be warranted for a minimum of 10 years against fading, de-lamination and weather deterioration.
- B. All cutting and finishing to be done using a CNC router. Graphics must be made using 12-Color High Definition printing technology.
- C. Vendor shall provide a sample from a supplied file to confirm quality. Panels must be entirely made in the U.S.A.

Minimum Capabilities:

1. 720 x 720 dpi output resolution.
 2. 48" x 96" maximum one piece size.
 3. 10 year maximum interior warranty.
 4. 10 year maximum exterior warranty.
 5. 110 square foot per hour print speed.
 6. A 6 color (CMYK + light magenta + light cyan) press.
- D. Digital Printing Specifications:
 1. All pictorials to be embedded into the CHPL system.
 2. Graphic panels to be 1/8" thick unless otherwise noted in drawings.

SECTION 10 14 00

3. All pictorials to be output at 6 color (CMYK + light magenta + light cyan).
4. All digital pictorials to output at a true [720 x 720] dpi output resolution.
5. Files to contain a minimum of 200 pixels per inch at final size.
6. ("Manufacturer") warrants that under normal wear and use the workmanship and materials used in the product purchased from the Manufacturer will meet the standards set forth on the applicable specification materials and that the product will not delaminate, peel, blister, crack or fade for a period ten (10) years against fading and delaminating for exterior use. This does not include: Accidents, abuse or misuse, exposure to extreme temperature or weather conditions, such as tornadoes or hurricanes, Improper fabrication or installation, and/or, Improper maintenance.

E. Maintenance

Don't use cleansers that contain abrasives, acids or alkalis. Panels must be able to be cleaned with any solvent and not restrict use of products containing lacquer thinner or acetone.

F. Recommended Supplier(s) Or Approved Equal:

BrandID Graphics, Warren Katz, 6796 Timbers Dr., Evergreen, CO 80439, 303-670-4325

brandid@wispertel.net

Izone: Brad, 2526 Charter Oak Drive, Suite 100, Temple TX 76502, 888-464-9663

brad@izoneimaging.com

FOSSIL INDUSTRIES INC: 44 Jefryn Boulevard, Deer Park, NY 11729, 631.254.9200

info@fossilgraphics.com

Folia: Systeme Huntingdon Inc., 110 Wellington, Huntingdon, Quebec, Canada, J0S1H0

1-800-363-5304, www.systemeinc.com

2.12 TACTILE SIGNS & BRAILLE

NOT USED.

2.13 LED LIGHTING

NOT USED.

2.14 CONCRETE FOOTINGS

REFER TO SECTION 725, "CLASS A" CONCRETE OF THE MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION—2011 EDITION.

2.15 ELECTRICAL COMPONENTS

NOT USED.

PART 3 – EXECUTION / FABRICATION

3.1 GENERAL

- A. Workmanship: Work shall be assembled in the shop, insofar as practicable, ready for installation at the site. Work that cannot be shop assembled shall be given a trial fit in the shop to ensure proper field assembly.

SECTION 10 14 00

1. Holes for bolts and screws shall be drilled or punched. Drilling and punching shall produce clean, true lines and surfaces.
 2. Mill joints to tight, hairline fit. Form joints exposed to weather to exclude water penetration.
 3. Weld to or on structural steel in accordance with AWS D1.1. Welding shall be continuous along the entire area of contact. Exposed welds shall be ground smooth.
 4. Exposed surfaces of work shall have a smooth finish and exposed riveting shall be flush.
 5. Fastenings shall be concealed where practicable, otherwise locate fasteners where they will be inconspicuous.
 6. Items specified to be galvanized shall be by hot dip process after fabrication if practicable. Galvanization shall be in accordance with ASTM A 123 and ASTM A 525, as applicable. Joints exposed to the weather shall be formed to exclude water.
 7. Drainage and weep holes shall be included as required to prevent condensation buildup.
- B. Provide signs as indicated in Sign Schedule. Fabricate in accordance with reviewed Shop Drawings. Signs and components shall be complete and free from visual and mechanical defects.
- C. Letter and sign fabrication shall be a complete system including stiffeners, fasteners, welding, sealants, jointing, miscellaneous pieces and material thickness. Connections, angles, shapes and details shown are diagrammatic in nature and are to be sized, reinforced and detailed by fabricator.
- D. No fabrication materials or procedures shall be used that will in any way change visual quality or in any manner have an adverse effect on existing materials or surfaces.
- E. In fabrication of metal pans in sign structures or individual letters "oil canning" surface appearance will not be acceptable.
- F. Component Fabrication: In accordance with Part 3 – Products.
- G. Prime concealed aluminum surfaces in contact with masonry, concrete or plaster with even coat of alkali resistant asphaltum base paint.
- H. Aluminum Panel Fabrication: Fabricate sign panels as detailed, minimum .080 thickness unless noted otherwise, with corners neatly formed, edges smooth and free of sharp or other injurious surface. Exterior edges are to appear seamless and have continuous welds. Grind welds smooth and fill prior to priming and finish painting. Sand exposed surfaces smooth and chemically treat with alidine to seal aluminum. Shop prime surface per paint manufacturer's recommendation. Apply manufacturer's recommended thickness of polyurethane enamel.
- I. Dissimilar Materials: Where dissimilar metals are in contact, or where aluminum is in contact with concrete, mortar, or absorptive materials subject to wetting, the surfaces shall be protected with a coat of asphalt varnish or a coat of zinc molybdate primer to prevent galvanic or corrosive action.
- J. Shop Painting: Surfaces of miscellaneous metal work, except nonferrous metal, corrosion resisting steel, and zinc coated work, shall be given one coat of zinc molybdate primer, or an approved rust resisting treatment and metallic primer in accordance with manufacturer's standard practice. Do not paint surfaces of items to be embedded in concrete. Upon completion of work, thoroughly recoat all damaged surfaces.

SECTION 10 14 00

3.2 WELDING

- A. Correct type to minimize permanent distortions of flat surfaces. Welding flux, oxides, and discoloration shall be removed by pickling or grinding, so that these areas match finish on adjacent areas. Any damage caused by fabrication must be repaired by grinding, polishing, or buffing.
- B. All welds to be ground smooth as possible.

3.3 FASTENERS

- A. On sign-face surface of sign panels shall not be exposed unless noted in drawings. Sign-face surfaces shall not be penetrated during fabrication or installation of signs. Sign-face surfaces shall not be deformed, distorted or discolored by attachment of concealed fasteners. Use 300 Series non-magnetic stainless steel fasteners with finish of system if fasteners are visible. Provide cadmium plated steel or equivalent when fasteners are used for steel to steel and steel to masonry construction. Miscellaneous fastening devices, and internal components shall be of aluminum, stainless steel, or zinc plated steel in accordance with ASTM A-164.
 - 1. Exposed fasteners to be painted to match surrounding surfaces.
- B. Adhesives: In accordance with recommendations made by manufacturer of material to be laminated or adhered. Adhesives that fade, discolor, or delaminate as a result of ultraviolet light or heat shall not be used. Adhesives shall be of non-staining and non-yellowing quality. Visible joints shall be free from air bubbles and other defects.
 - 1. Silicone Adhesives: Ready to use, high performance adhesive. General Electric GC 1200 sealant, translucent SCS 1201 or equal as recommended by manufacturer for bonding condition.
- C. Anchors and Inserts: Provide nonferrous-metal or hot-dip galvanized anchors and inserts as required for corrosion resistance. Use toothed steel or lead expansion-bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.

3.4 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- D. Aluminum Finishes:
 - 1. Clear Anodic Finish: Manufacturer's standard Class 1 clear anodic coating, 0.018 mm or thicker, over a satin (directionally textured) mechanical finish, complying with AAMA 611.
 - 2. Organic Coating: Thermosetting, modified-acrylic enamel primer/topcoat system complying with AAMA 2603 except with a minimum dry film thickness of 1.5 mils (0.04 mm), medium gloss.
- E. Steel Finishes:

SECTION 10 14 00

1. Surface Preparation: Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."
2. Exposed steel to allow to rust.

3.5 APPLIED LETTERING AND GRAPHICS

- A. Lettering shown on sign type drawings are intended as guidelines for layouts, type size and font face only.
- B. Complete copy text shall be in accordance with information noted on drawings.
- C. Spelling and punctuation shall be correct. Should an error in spelling or punctuation be found, or spelling appear questionable, notify Designer before proceeding.
- D. Sign type drawings and layout of copy contained within the schedule of graphics are based on scale calculations of the message lengths within given estimated sign areas. Should conflict arise in final message layout, notify Designer before proceeding.
- E. Align letterforms to maintain baseline parallel to sign format. Maintain margins as specified in sign type layouts.
- F. Provide written documentation that the Braille translations included on the manufacture's signage provided in these drawings has been evaluated by the American Foundation for the Blind, and is, in their opinion, correct and compliant with the ADAAG and Grade 2 Braille.
- G. Translations: Any second language text, as noted in Sign Message Schedule, is the responsibility of the customer.

3.6 SILKSCREENS

NOT USED.

PART 4 – INSTALLATION

4.1 PRE-INSTALLATION SITE INSPECTION

- A. Visit site with Owner and Designer to determine specific installation conditions and priorities. For exact installation locations for each sign, consult with Designer/Owner.
- B. If special structure reinforcement is necessary to ensure the proper installation of any signage element, the Contractor must notify the Designer in writing for proper coordination of site preparation.
- C. Coordinate anchor details and materials with Designer. Notify Designer in writing of conditions detrimental to proper and timely installation of sign work.
- D. Inspect signs for evidence of damage at site prior to installation.
- E. Protection: Protect adjacent surfaces from damage during installation.
- F. Retain protective coverings intact and remove simultaneously from similarly finished items to preclude non-uniform oxidation and discoloration. Restore protective coverings which have been damaged during shipment or installation of Work. Remove protective coverings only when there is no possibility of damage.

4.2 PROPERTY LINES, EASEMENT, UTILITIES

Contractor shall be responsible for verifying location of existing property lines, easements and utilities that may impact the installation location of any sign structure. Con-

SECTION 10 14 00

ditions contrary to Designer's indicated locations shall be submitted to the Designer in written or diagrammatic form for review.

4.3 SURFACE CONDITIONS

Examine areas and conditions under which work of this specification will be performed. Conditions detrimental to timely and proper completion of Work shall be corrected by the contractor responsible for that portion of the Work. Do not proceed until unsatisfactory conditions are corrected.

4.4 INSTALLATION (GENERAL)

- A. Follow recommendations and instructions for installation as provided herein (or by manufacturer where instructions are provided). Notify Designer in writing if such installation will not provide permanent, rigid installation in existing conditions.
- B. Install sign units (and components at locations shown or scheduled), securely mounted with concealed, theft-proof fasteners. No exposed fasteners for installation are to be visible unless written approval is obtained from Designer. Attach signs to substrates in accordance with manufacturer's instructions. Provide anchorage and fitting coordinate location in field with Designer. Support signs until setting time of adhesive with foam tape or other mechanical means that does not damage surrounding surfaces.
- C. Securely mount signage in accordance with manufacturer's recommendations and as indicated, set plumb, level and true to line, and at proper height, without warp or rack.
- D. Coordinate and field measure proper location of sign units, where required, with Designer.
- E. Repair or replace damaged units as directed by Designer.
- F. Interface with Other Products: Coordinate sign locations with existing mechanical, electrical, plumbing and landscape elements and notify Designer in writing of any visual or physical conflicts. Coordinate installation of electrical connections with Contractor.
- G. Sealants: Apply in one uniform, continuous bead.

6.3 INSTALLATION (EXTERIOR SIGNS)

- A. Signs shall be installed at locations shown on the drawings. Coordinate and field measure proper location of signs with Designer. All signs shall be installed plumb and true at mounting heights indicated, and by method shown or specified. Signs mounted on other surfaces shall not be installed until finishes on such surfaces have been completed.
- B. Anchorage: Anchorage not otherwise specified or indicated shall include slotted inserts, expansion shields, and power driven fasteners when approved for concrete; machine carriage bolts for steel.
- C. Bracket-Mounted Signs: Provide manufacturer's standard brackets, fittings, and hardware for mounting signs that project at right angles from walls and ceilings. Attach brackets and fittings securely to walls and ceilings with concealed fasteners and anchoring devices to comply with manufacturer's written instructions.

6.4 INSTALLATION (INTERIOR SIGNS)

NOT USED.

6.05 CLEANING

- A. At completion of Work, clean sign surfaces so they are free of residue and other foreign materials, leaving ready for acceptance by Owner or Designer.

SECTION 10 14 00

6.06 DAMAGE AND REPAIR

- A. Repair: Promptly repair any damage to adjacent surfaces which occurred during installation. The Client and Designer will review and approve the Awarded Bidder's method/quality of project site repairs and/or replacement items prior to commencement of this Work. This Work will be coordinated by the Client and/or Building Management personnel at their convenience, meaning after 5:00 p.m., Monday through Friday, and Saturdays or Sundays (i.e., least disruptive to the Client).
- B. Touch Up: Upon completion of installation, visually check exposed surfaces of Work of this specification, and touch up scratches and abrasives to be completely invisible to unaided eye from a distance of five feet.

7.01 POWER REQUIREMENTS

NOT USED.

7.02 CONDUIT

NOT USED.